

What is claimed is:

1. A ballast for a discharge lamp, comprising:

a driver circuit;

a timing circuit connected to said driver circuit;

a resonant inverter connected to said driver circuit and having an output voltage;

and

a feedback circuit that connects the output voltage from said resonant inverter to said timing circuit, said feedback circuit including a phase shifting circuit that selectively shifts a phase of the output voltage from said resonant inverter.
2. The ballast of claim 1, wherein said phase shifting circuit comprises a further inverter connected to an input to said timing circuit.
3. The ballast of claim 2, wherein said feedback circuit further comprises an attenuation circuit that includes a capacitive divider connected between the output voltage and an input to said further inverter.
4. The ballast of claim 1, wherein said phase shifting circuit comprises plural RC phase-shifting networks.
5. The ballast of claim 4, wherein a first of said phase-shifting networks comprises a first capacitor coupled to the output voltage and a first resistor coupled to said driver, and a second of said phase-shifting networks comprises a second capacitor and resistive means coupled to said timing circuit, said second network being connected in parallel with said first resistor.

6. The ballast of claim 5, wherein said resistive means comprises one of a resistor and anti-parallel diodes and is connected between said first resistor and said timing circuit.

7. The ballast of claim 5, further comprising a third RC network that includes a switch that connects said third RC network to said timing circuit during starting of a lamp that includes the ballast.

8. The ballast of claim 1, further comprising a switch operated by a pulse width modulation input and connected to said timing circuit.

9. A method of operating a ballast for a discharge lamp that includes a driver circuit, a timing circuit connected to the driver circuit, and a resonant inverter connected to the driver circuit and having an output voltage, the method comprising the steps of:

feeding back the output voltage from the resonant inverter to the timing circuit;
and

selectively shifting a phase of the output voltage being fed back from the resonant inverter.

10. The method of claim 9, further comprising the step of attenuating the fed back output voltage with a capacitive divider connected between the output voltage and the timing circuit.

11. The method of claim 9, wherein the phase shifting step includes the step of phase shifting with plural RC phase-shifting networks.

12. The method of claim 11, wherein a first of the phase-shifting networks includes a first capacitor coupled to the output voltage and a first resistor coupled to the driver, and a second of the phase-shifting networks includes a second capacitor and

resistive means coupled to the timing circuit, where the second network is connected in parallel with the first resistor.

13. The method of claim 12, wherein the RC networks further include a third RC network that includes a switch and the method further comprises the step of connecting the third RC network to the timing circuit only during starting of a lamp that includes the ballast.

14. The method of claim 9, further comprising the step of controlling the timing circuit with a switch operated by a pulse width modulation input during a dimming operation of a lamp that includes the ballast.